Commonwealth of Kentucky
Division for Air Quality

RESPONSE TO COMMENTS

ON THE TITLE V DRAFT PERMIT V-06-027
Degussa Corporation
5150 Gilbertsville Highway
P.O. Box 649
Calvert City, KY 42029
August 11, 2006
Sukhendu K. Majumdar, Reviewer
Plant I.D. #: 21-157-00036
AI #: 2931

SOURCE DESCRIPTION:

Pursuant to 401 KAR 52:020 Section 4, Degussa Corporation, submitted an initial Title V permit application to the Division for Air Quality on December 14, 1998. Degussa Corporation manufactures a variety of catalyst for the chemical industries. There are five different catalyst manufacturing processes in the facility, calciners, and dryers. These are:

1. HDS and Other fixed bed catalyst - Emission Unit #1;
2. Vinyl Acetate Monomer (VAM) Series Catalyst - Emission Unit #2;
3. Bead Process - Emission Unit #3;
4. Precious Metal Catalyst (PMC) Process - Emission Unit #4;
5. GEMX Process - Emission Unit #5;
6. Calciners - Emission Unit #6; and
7. Belt and Vibrating Dryers - Emission Unit #7.

Raw materials used to manufacture catalyst are: alumina, silica, activated carbon, base metal solutions, substrate and rare earth and precious metals solutions. Chemicals used in the manufacturing process are: nitric acid, ammonium hydroxide, hydrazine hydrate, potassium carbonate, formaldehyde, sodium hydroxide and a few others in small quantities. The process equipment consists of calciner, impregnator, dryers and reactors. The catalysts manufacturing in the facility is a combination of batch and continuous processes and some of the equipment are common between the five catalyst manufacturing processes.

The facility has seven (7) emission units and seven (7) emission points. Bag houses, fabric filters and wet scrubbers are used to recover the precious metals and to reduce particulate matter emissions. The facility uses 85% efficient scrubbers (AT1072, AT1074, and AT1075) common to HDS, VAM and Bead processes to reduce NOx emissions. GEMX process has separate scrubbers (2080) for NO_x emission reduction.

PUBLIC AND U.S. EPA REVIEW:

On June 21, 2006 the public notice on availability of the draft permit and supporting material for comments by persons affected by the plant was published in *TheTribune-Courier* in Benton, Kentucky. The public comment period expired 30 days from the date of publication.

Comment received:
Comments were received from Degussa Corporation on July 21, 2006. Attachment A to this

document lists the comments received and the Division's response to each comment. Minor changes were made to the permit as a result of the comments received, however, in no case were any emissions standards, or any monitoring, recordkeeping or reporting requirements relaxed. Please see Attachment A for a detailed explanation of the changes made to the permit. The U.S. EPA has 45 days to comment on this proposed permit.

ATTACHMENT A

Response to Comments

1.	Text Location:	Permit Application Summary Form, Source Description, Paragraph 2, Item #2
	Text:	Vinyl Acetate Monomer (VAM) Series Catalyst: Emission Unit #2.
	Comment:	Degussa Corporation requests that the process name be changed.
	Recommended Change:	VAM Catalyst Process: Emission Unit #2
	DAQ Response	No change was made. From our discussion with the facility, VAM is an acronym for Vinyl acetate monomer.
2.	Text Location:	Permit Application Summary Form, Source Description, Paragraph 2, Item #5
	Text:	Butane Diol (GEMX) Process: Emission Unit #5
	Comment:	Degussa Corporation requests that the process name be changed.
	Recommended Change:	GEMX Catalyst Process: Emission Unit #5
	DAQ Response	Incorporated in the permit application summary form.
3.	Text Location:	Permit Application Summary Form, Source Description, Paragraph 3
	Text:	Raw material used to manufacture catalyst are: alumina, metal oxides, substrate and rare earth or precious metals. Chemicals used in the manufacturing process are: nitric acid, ammonium hydroxide, hydrazine, potassium carbonate and a few others in small quantities
	Comment:	Degussa Corporation recommends the addition of other raw materials for completeness.
	Recommended Change:	Raw material used to manufacture catalyst are: alumina, silica, activated carbon, base metal solutions, substrate and rare earth and precious metals solutions. Chemicals used in the manufacturing process are: nitric acid, ammonium hydroxide, hydrazine hydrate, potassium carbonate, formaldehyde, sodium hydroxide, and a few others in small quantities.
	DAQ Response	Incorporated in the permit application summary form.
4.	Text Location:	Permit Statement of Basis, Source Description, Paragraph 1, Item #2
	Text:	Vinyl Acetate Monomer (VAM) Series Catalyst: Emission Unit #2.
	Comment:	Degussa Corporation requests that the process name be changed.
	Recommended Change:	VAM Catalyst Process: Emission Unit #2
	DAQ Response	No change was made. From our discussion with the facility, VAM is an acronym for Vinyl acetate monomer.
5.	Text Location:	Permit Statement of Basis, Source Description, Paragraph 1, Item #5
	Text:	Butane Diol (GEMX) Process: Emission Unit #5
	Comment:	Degussa Corporation requests that the process name be changed.
	Recommended Change:	GEMX Catalyst Process: Emission Unit #5
	DAQ Response	Incorporated in the Statement of Basis.
6.	Text Location:	Permit Statement of Basis, Source Description, Paragraph 3
	Text:	Raw material used to manufacture catalyst are: alumina, metal oxides, substrate and rare earth or precious metals. Chemicals used in the manufacturing process are: nitric acid, ammonium hydroxide, hydrazine, potassium carbonate and a few others in small quantities
	Comment:	Degussa Corporation recommends the addition of other raw materials for completeness.
	Recommended Change:	Raw material used to manufacture catalyst are: alumina, silica, activated carbon, base metal solutions, substrate and rare earth and precious metals

		solutions. Chemicals used in the manufacturing process are: nitric acid, ammonium hydroxide, hydrazine hydrate, potassium carbonate, formaldehyde, sodium hydroxide, and a few others in small quantities.
	DAQ Response	Incorporated in the Statement of Basis.
7.	Text Location:	Permit Statement of Basis, Page 2 of 3, Description – Emission Unit#: Stack (Emission Point), Item 2
	Text:	VAM Series-Emission Unit #2's emission points: Main Stack (EP01)
	Comment:	This process has two emission points.
	Recommended Change:	VAM Series-Emission Unit #2's emission points: Main Stack (EP01, EP12)
	DAQ Response	Incorporated in the Statement of Basis.
8.	Text Location:	Permit Statement of Basis, Page 2 of 3, Type of Control and Efficiency
	Text:	EU #1 Type of Control
	Comment:	Addition of control device.
	Recommended Change:	Please add Scrubber Baghouse, BF-1060
	DAQ Response	Incorporated in the Statement of Basis.
9.	Text Location:	Permit Statement of Basis, Page 2 of 3, Type of Control and Efficiency
	Text:	EU #2 Type of Control
	Comment:	Addition of control device
	Recommended Change:	BF-1060
	DAQ Response	Incorporated in the Statement of Basis.
10.	Text Location:	Permit Statement of Basis, Page 2 of 3, Type of Control and Efficiency
	Text:	EU #3 Type of Control
	Comment:	Addition of control device
	Recommended Change:	BF-1060
	DAQ Response	Incorporated in the Statement of Basis.
11.	Text Location:	Permit Statement of Basis, Page 2 of 3, Type of Control and Efficiency
	Text:	EU #4 Type of Control: T-395 Wet Filters
	Comment:	Removal of listed control device. This emission unit has product recovery devices only
	Recommended Change:	Degussa Corporation recommends that no control devices be listed for EU#4.
	DAQ Response	Incorporated in the Statement of Basis.95% control bag houseremoved from emission inventory system. Summary application form emissions has been revised.
12.	Text Location:	Permit Statement of Basis, Page 3 of 3, Emission and Operating Caps Description
	Text:	Entire section
	Comment:	While NOx from GEMX process is referenced, NOx from HDS process is omitted.
	Recommended Change:	In the spirit of the operating permit, Degussa Corporation believes that this was an oversight in the writing of the Statement. Degussa leaves the decision to the Division on change.
	DAQ Response	Incorporated in the Statement of Basis.
13.	Text Location:	Air Quality Permit, Page 2 of 24, Emission point process equipment
	Text:	11. VAM Reaction Vessels and 12. Belt Calciners D103A and D103B
	Comment:	VAM Reaction Vessels are part of EP 12 and the belt calciners were removed in 2005.
	Recommended	Degussa Corporation recommends noting that the VAM reaction vessels are

	Change:	part of EP 12 and removing the Belt Calciners D103A and D103B
	DAQ Response	EP-12 Belt Calciners D103A and D103B have been removed from the permit.
14.	Text Location:	Air Quality Permit, Page 2 of 24, Raw material for VAM Series Catalyst Production:
	Text:	Precision/Rare Earth Metal 3lb/hr
	Comment:	Degussa Corporation recommends correction of line.
	Recommended Change:	Precious/Rare Earth Metal 3lb/hr
	DAQ Response	Incorporated in the proposed permit.
15.	Text Location:	Air Quality Permit, Page 3 of 24, Equipment and Controls
	Text:	See table below
	Comment:	Control devices need to be added to the table.
	Recommended Change:	Degussa Corporation recommends additions and changes shown attached table. Recommended changes are shown in red.
	DAQ Response	Incorporated in the proposed permit.
16.	Text Location:	Air Quality Permit, Page 4 and 5 of 24, Emission Limitations and Compliance Demonstration
	Text:	NA
	Comment:	There are no emission limitations on NOx listed.
	Recommended Change:	In the spirit of the operating permit, Degussa Corporation believes that this was an oversight in the text of the Permit. Degussa leaves the decision to the Division on change.
	DAQ Response	Incorporated in the proposed permit.
17.	Text Location:	Air Quality Permit, Pages 6 of 24, Specific Control Equipment Operating Conditions
	Text:	The nitrogen oxide scrubbers shall be tested and calibrated, at least every six calendar months.
	Comment:	Calibration of this unit is not defined.
	Recommended Change:	Degussa Corporation recommends defining testing and calibration of the unit as pH and ORP meter testing and calibration
	DAQ Response	Incorporated in the proposed permit.
18.	Text Location:	Air Quality Permit, Pages 7 of 24, Emission Points: EP11
	Text:	2. Sodium Carbonate Tank 0305A 5. Caustic Tank 0305A, 6. Sodium Carbonate Storage 0310
	Comment:	These items have changed since the draft was submitted.
	Recommended Change:	Degussa Corporation recommends that items 5 and 6 be removed from the listing as the equipment has changed. Item 2 is recommended to be changed to Sodium Carbonate Tanks 0305A/B.
	DAQ Response	Incorporated in the proposed permit.
19.	Text Location:	Air Quality Permit, Pages 7 of 24, Control Device
	Text:	Dry Filter
	Comment:	Dry filtration is no longer in place in this process. Product recovery is included in this process. Additionally, the other equipment in this area is listed as Insignificant Activities in Section C.
	Recommended Change:	Degussa Corporation recommends that control device be listed as “None”.
	DAQ Response	Incorporated in the proposed permit.
20.	Text Location:	Air Quality Permit, Pages 7 of 24, Emission Unit #7
	Text:	Entire section under this emission unit.
	Comment:	This emission unit and corresponding emission point is not located in the PMC Process.
	Recommended	Degussa Corporation recommends that this entire section be moved to be

	Change:	included in section for EU's 1, 2, and 3.
	DAQ Response	Incorporated in the proposed permit.
21.	Text Location:	Air Quality Permit, Pages 9 of 24, Name of Emission Unit
	Text:	Emission Unit #5: Butane Diol (GEMX) Process
	Comment:	Degussa Corporation requests that the process name be changed.
	Recommended Change:	GEMX Catalyst Process: Emission Unit #5
	DAQ Response	Incorporated in the proposed permit.
22.	Text Location:	Air Quality Permit, Pages 10 of 24, Specific Monitoring Requirements, c.
	Text:	Catalyst manufacturing bed shall be equipped with a temperature monitoring device to determine NOx generation
	Comment:	While Degussa Corporation monitors temperature in the catalyst bed, it does not use this information to monitor NOx generation. pH and ORP in the scrubber process are controlled to monitor NOx generation and control.
	Recommended Change:	Degussa Corporation recommends that monitor of temperature of the catalyst bed be removed and replaced with monitor of pH and ORP in the scrubber.
	DAQ Response	Incorporated in the proposed permit.
23.	Text Location:	Air Quality Permit, Pages 11 of 24, Specific Control Equipment Operating Conditions, b.
	Text:	The nitrogen oxide scrubbers shall be tested and calibrated, at least every six calendar months.
	Comment:	Calibration of this unit is not defined.
	Recommended Change:	Degussa Corporation recommends defining testing and calibration of the unit as pH and ORP meter testing and calibration.
	DAQ Response	Incorporated in the proposed permit.
24.	Text Location:	Air Quality Permit, Pages 12 of 24, Emission Points: EP-02 and EP-13
	Text:	Date of Construction: 1995
	Comment:	Units were constructed in 1988
	Recommended Change:	Degussa Corporation recommends changing date of construction to 1988.
	DAQ Response	Incorporated in the proposed permit.
25.	Text Location:	Air Quality Permit, Pages 14 of 24, Insignificant Activities
	Text:	Item 11. Ammonia Tank (To be installed)
	Comment:	The above tank has been installed and has been given a position number of T-1700.
	Recommended Change:	Degussa Corporation recommends that the description be changed as per comment above.
	DAQ Response	Incorporated in the proposed permit.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.